Magnetic Resonance / Transrectal Ultrasound Guided Biopsy of the Prostate Compared to Standard Transrectal Ultrasound Guided Biopsy for Diagnosis of Prostate Cancer

BY

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s ***Title of Thesis:***Magnetic Resonance / Transrectal Ultrasound Guided Biopsy of the Prostate Compared to Standard Transrectal Ultrasound Guided Biopsy for Diagnosis of Prostate Cancer

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Abstract

Background: Multiparametric magnetic resonance imaging (mp-MRI) may improve the detection of prostate cancer (PCa).

Objective: To compare mp-MRI transrectal ultrasound (TRUS)-fusion targeted biopsy with standard 12-coreTRUS-guided random biopsy for overall and clinically significant PCa detection among biopsy- naïve patientswith suspected PCa.

Patients and Methods:This ethical committee-approved, single-center, prospective, randomized clinicalstudy (April 2018 to December 2019) included 98 biopsy-naïvepatients referred for prostate biopsy based on

prostate specific antigen (PSA) values (PSA > 4 ng/ml) and/or suspicious digital rectal examination (DRE). Patients were randomized 1:1 to the mp-MRI or control group.Patients in the mp-MRI group underwent prebiopsymp-MRI followed by 12-core TRUSguided random biopsy and cognitive MRI/TRUS fusion targeted biopsy from each detected lesion. The control groupunderwent TRUS-guided random biopsy alone.

Results: Overall, 40 patients were evaluable in both the mp-MRI andcontrol groups. The overall PCa detection rate and the clinically significant cancerdetection rate were similar between the mp-MRI and control groups, respectively (42.5% [17 of 40] vs40% [16of 40],p = 0.820, and 35% [14 of 40]vs 30% [12 of 40], p = 0.633).

Conclusions: MP-MRI/TRUS-fusion targeted biopsy did not improve PCa detection rate

Keywords: Prostate- Cancer – Biopsy – Multiparametric magnetic resonance imaging